

Notice of Allowability

Application No.

09/657,738

Examiner

Marie R. Yamnitzky

Applicant(s)

OTANI ET AL.

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment received September 28, 2005.
2. ☒ The allowed claim(s) is/are 22-27 (renumbered as 1-6, respectively).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 12072005.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

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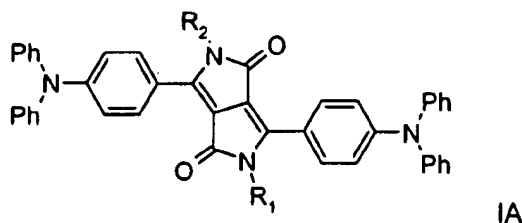
An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joseph Suhadolnik on December 06, 2005.

The claims have been amended as follows:

1-21. (Cancelled)

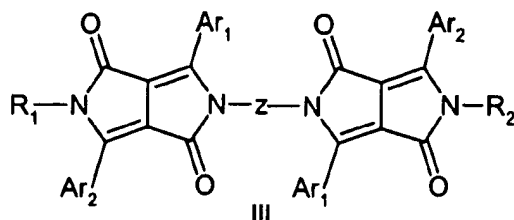
22. (Currently Amended) An electroluminescent diketopyrrolopyrrole according to the formula



where R₁ and R₂ are C₁-C₈alkyl or phenyl or naphthyl which phenyl or naphthyl can be substituted one to three times with C₁-C₈alkyl, C₁-C₈alkoxy, halogen or phenyl.

23. (Previously Presented) An electroluminescent diketopyrrolopyrrole according to claim 22 where R₁ and R₂ are methyl.

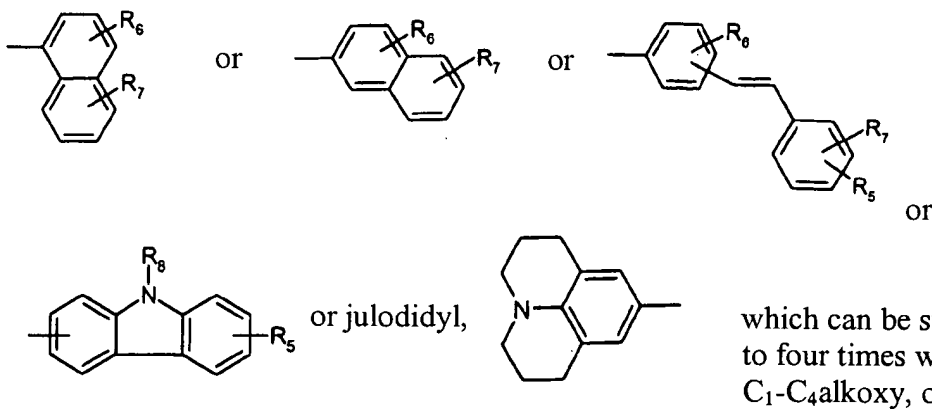
24. (Currently Amended) Fluorescent diketopyrrolopyrroles ("DPP") represented by formula III



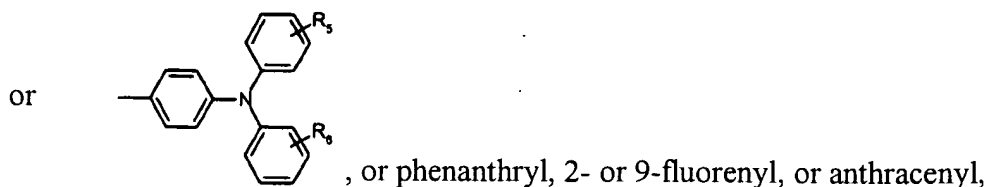
wherein R_1 and R_2 , independently from each other, stand for C_1 - C_{25} -alkyl, allyl which can be substituted one to three times with C_1 - C_3 alkyl or Ar_3 , or $-CR_3R_4-(CH_2)_m-Ar_3$, wherein R_3 and R_4 independently from each other stand for hydrogen, C_1 - C_4 alkyl, or phenyl which can be substituted one to three times with C_1 - C_3 alkyl,

Ar_3 stands for phenyl or 1- or 2-naphthyl which can be substituted one to three times with C_1 - C_8 alkyl, C_1 - C_8 alkoxy, halogen or phenyl, which can be substituted with C_1 - C_8 alkyl or C_1 - C_8 alkoxy one to three times, and m stands for 0, 1, 2, 3 or 4,

Ar_1 and Ar_2 , independently from each other, stand for



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wherein

R_5 , R_6 and R_7 , independently from each other, stand for hydrogen, cyano, halogen, C_1 - C_6 alkyl, $-NR_8R_9$, $-OR_{10}$, $-S(O)_nR_8$, $-Se(O)_nR_8$, or phenyl, which can be substituted one to three times with C_1 - C_8 alkyl or C_1 - C_8 alkoxy, and n stands for 0, 1, 2 or 3,

wherein R_8 and R_9 , independently from each other, stand for hydrogen, phenyl, C_1 - C_{25} -alkyl, C_5 - C_{12} -cycloalkyl, $-CR_3R_4-(CH_2)_m-Ph$, R_{10} , wherein

R_{10} stands for C_6 - C_{24} -aryl, or a saturated or unsaturated heterocyclic radical comprising five to seven ring atoms, and m stands for 0, 1, 2, 3 or 4, wherein the ring consists of carbon atoms and one to three hetero atoms selected from the group consisting of nitrogen, oxygen and sulfur, wherein Ph , the aryl and heterocyclic radical can be substituted one to three times with C_1 - C_8 alkyl, C_1 - C_8 alkoxy, or halogen; or

R_8 and R_9 stand for $-C(O)R_{11}$, wherein R_{11} can be C_1 - C_{25} -alkyl, C_5 - C_{12} -cycloalkyl, R_{10} , $-OR_{12}$ or $-NR_{13}R_{14}$, wherein

R_{12} , R_{13} , and R_{14} stand for C_1 - C_{25} -alkyl, C_5 - C_{12} -cycloalkyl, C_6 - C_{24} -aryl, or

R_5 , R_6 and R_7 , independently of one another, stand for a saturated or unsaturated heterocyclic radical comprising five to seven ring atoms, wherein the ring consists of carbon atoms and one to three hetero atoms selected from the group consisting of nitrogen, oxygen and sulfur, wherein heterocyclic radical can be substituted one to three times with C_1 - C_8 alkyl or C_1 - C_8 alkoxy, or

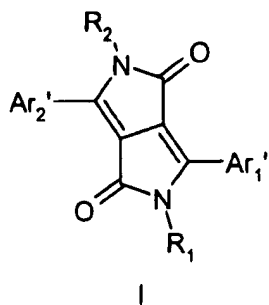
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-NR₈R₉ stands for a five- or sixmembered heterocyclic radical in which R₈ and R₉ together stand for tetramethylene, pentamethylene, -CH₂-CH₂-O-CH₂-CH₂-, or -CH₂-CH₂-NR'₅-CH₂-CH₂-, wherein R'₅ stands for hydrogen, cyano, halogen, C₁-C₆alkyl, -OR₁₀, -S(O)_nR₈, -Se(O)_nR₈, or phenyl, which can be substituted one to three times with C₁-C₈alkyl or C₁-C₈alkoxy, and n stands for 0, 1, 2 or 3,

and wherein Z stands for a diradical selected from the group consisting of a single bond, C₂-C₆alkylene, which can be substituted one to three times with C₁-C₄alkyl, C₁-C₄alkoxy, or phenyl, phenylene or naphthylene,

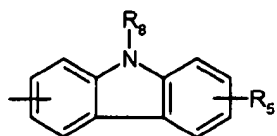
with the proviso that R₆ and R₇ do not stand simultaneously for hydrogen;

or formula I

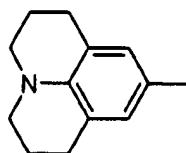


, wherein R₁ and R₂ are as defined above, and Ar₁' and Ar₂' independently

from each other, stand for



, julolidyl,



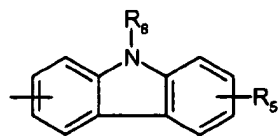
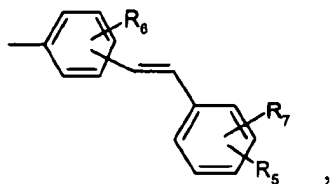
which can be substituted one to four times with C₁-C₄alkyl or C₁-C₄alkoxy,

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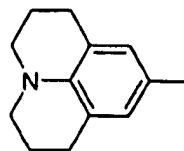
or ~~phenanthryl~~, 2- or 9-fluorenyl, or ~~anthracenyl~~,

wherein R_5 and R_8 are as defined above.

~~24~~ 25. (Currently Amended) Fluorescent diketopyrrolopyrroles ("DPP") represented by formula III according to claim ~~23~~ 24 wherein Ar_1 and Ar_2 , independently from each other, stand for

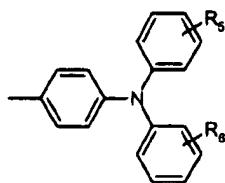


or julodidyl,



which can be substituted one to four times with C_1 - C_4 alkyl or C_1 - C_4 alkoxy, or phenyl

or

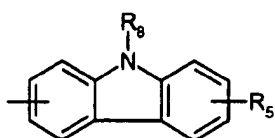


or 2- or 9-fluorenyl.

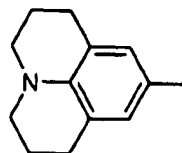
~~25~~ 26. (Currently Amended) Fluorescent diketopyrrolopyrroles ("DPP") represented by formula III according to claim ~~23~~ 24 wherein Z stands for a diradical selected from the group consisting of a single bond, C_2 - C_6 alkylene substituted one to three times with C_1 - C_4 alkyl or C_1 - C_4 alkoxy, or naphthylene.

~~26~~ 27. (Currently Amended) Fluorescent diketopyrrolopyrroles ("DPP") represented by formula I according to claim ~~23~~ 24 wherein Ar_1' and Ar_2' independently from each other, stand for

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, julolidyl,



which can be substituted one to four times with C₁-C₄alkyl or C₁-C₄alkoxy,

or 2- or 9-fluorenyl.

Applicant's amendment received September 28, 2005 cancelled claims 7 and 13, amended claims 22 and 23, and added four new claims. The new claims were numbered as 24, 24, 25 and 26. The second claim 24 and claims 25 and 26 have been renumbered as 25-27, respectively, as shown in the examiner's amendment.

A grammatical correction is made to claim 22.

The dependency of claims 25-27 is corrected.

With respect to the deletion of "phenanthryl" and "anthracenyl" from claim 24, compounds of formula I wherein Ar₁' and Ar₂' are phenanthryl or anthracenyl are encompassed by claim 1 of US 4,585,878 to Jost et al. It is the examiner's position that such compounds would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention given Jost's disclosure, particularly Jost's claim 1.

With respect to the other compounds within the scope of present claims 24-27, while at least some of the compounds are within the broad disclosure of the Jost patent, Jost's preferences, examples and claims lead away from the presently claimed compounds.

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Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY

December 07, 2005



**MARIE YAMNITZKY
PRIMARY EXAMINER**

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